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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,831	09/19/2003	Gregory J. May	200300696-1	6035

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EXAMINER

MOON, SEOKYUN

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/665,831

Applicant(s)

MAY, GREGORY J.

Examiner

Seokyun Moon

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-24 and 35 is/are allowed.
- 6) ☒ Claim(s) 25-30, 34, 36 and 37 is/are rejected.
- 7) ☒ Claim(s) 31-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. The Applicants' arguments, filed on December 20, 2006, with respect to 1-24, 31-33, and 35 have been fully considered and are persuasive. The rejections of claims 1-24, 31-33, and 35 have been withdrawn.

The Applicants' arguments with respect to claims 25-30, 34, 36, and 37 have been considered but are moot in view of the new ground(s) of rejection.

Remark

2. The subject matter disclosed in the Application might be different and distinguishable from the disclosed prior art. However, Examiner respectfully submits that the Applicants have failed to disclose such subject matter in the claims, specifically.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 25-28, 30, and 34** are rejected under 35 U.S.C. 102(b) as being anticipated by Naito et al. (US 6,356,251, herein after "Naito").

As to **claim 25**, Naito teaches a method of encoding color data to activate an optically addressable display including a plurality of pixels [col. 1 lines 55-59], the method comprising the steps of:

at a projection device (a combination of "*light-emitting elements 42c*" and "*light emission driving circuit substrate 43*" including the driving circuits) [fig. 20]:

producing emissions of different polarizations [fig. 20] [col. 17 lines 40-57];

for each pixel, applying data [col. 10 lines 31-36] to each of the emissions of different polarizations [col. 17 lines 40-57] by selectively passing (selectively passing the lights emitted by the light emitting elements) the emissions of different polarizations to the pixels;

at the optically addressable display:

at each pixel, producing a different display for each of the emissions of different polarizations when received [col. 4 lines 50-58].

As to **claim 26**, Naito teaches that the step of producing comprises:

generating an emission in a visible or non-visible spectrum [col. 16 lines 33-34]; and

alternating polarization of the emission (having different polarizations for each of the light emitting diodes with different colors) [col. 17 lines 40-57].

As to **claim 27**, Naito teaches the generating step comprising generating a laser emission [col. 7 lines 61-62].

As to **claim 28**, Naito teaches the alternating step comprising filtering (filtering out portions of lights traveling in certain directions) the emission [col. 17 lines 40-57].

As to **claim 30**, Naito teaches the alternating step comprising alternating polarization between one of multiple different phases (the polarized lights being orthogonal to each other) [col. 17 lines 40-48].

As to **claim 34**, Naito teaches that the step of applying data to the emissions of different polarizations sequentially [col. 5 lines 63-64].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 29** is rejected under 35 U.S.C. 103(a) as being unpatentable over Naito.

Naito teaches the alternating step comprising filtering the emission through a filter ("*polarizing plate 49d*") [fig. 20].

Naito does not expressly disclose the filter being either a multi-segment filter or a linear filter.

However, Examiner takes official notice that it is well known in the art to use a linearly polarized filter for a polarizing filter.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to specify type of the filter of Naito to be a linearly polarized filter, in order to allow emitted light of the display of Naito to travel in certain directions only, and thus to prevent any interference from other emitted light.

7. **Claims 36 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al. (US 5,706,061, herein after "Marshall") in view of Butler-Smith et al. (US 2005/0041163, herein after "Butler-Smith").

As to **claim 36**, Marshall teaches an optically addressable display ("*DMD-type SLM image display*") [col. 5 lines 59-61] comprising:

a projection device, including,

means ("*lens 24*") [fig. 1] for directing emissions of plural colors toward an array of pixels [col. 6 lines 38-40]; and

means ("*motor 22*") [fig. 1] for selectively passing emissions of each of the plural colors according to applied data [col. 6 lines 37-38]; and

a screen ("*an area array 50 of SLM 26*"), including,

at each pixel ("*DMD pixel 46*"), means ("*deflectable mirror 52*") [figs. 2 and 3] for actively producing (determining the direction of the emission of lights, and thus constituting production of plural color display) plural color displays [col. 6 line 67 – col. 7 line 1 and col. 7 lines 9-12], one for each of the plural colors.

Marshall does not teach having emissions of a plurality of polarization states.

However, Butler-Smith [fig. 7] teaches an idea of using a polarized color wheel for a spatial light modulator such as a DMD [col. 1 lines 1-4].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display of Marshall to replace the color wheel of Marshall with the polarized color wheel of Butler-Smith, such that the lens of Marshall directs emissions of plural polarization states toward an array of pixels and the motor of Marshall passes emission of each of the plural polarization states selectively, in order to optimize the image display function of Marshall by differentiating each of the plurality of color channels.

As to **claim 37**, Marshall teaches an optically addressable display ("*DMD-type SLM image display*") [col. 5 line 59-61] comprising:

a plurality of separate color data channels ("*red, blue, and green segments*" of the "*color wheel 20*") [fig. 1], wherein data is encoded onto each of the separate color data channels; and

at each pixel ("*DMD pixel 46*"), means ("*deflectable mirror 52*") [figs. 2 and 3] for actively producing (determining the direction of the emission of lights, and thus constituting production of plural color displays) plural color displays [col. 6 line 67 – col. 7 line 1 and col. 7 lines 9-12], one for each of the plurality of separate color data channel.

Marshall does not teach having emissions of a plurality of polarizations.

However, Butler-Smith [fig. 7] teaches an idea of using a polarized color wheel for a spatial light modulator such as a DMD [col. 1 lines 1-4].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display of Marshall to replace the color wheel of Marshall with the polarized color wheel of Butler-Smith, such that the lens of Marshall receives emissions of a plurality of polarizations corresponding to a separate color data channel, in order to optimize the image display function of Marshall by differentiating each of the plurality of color channels.

Allowable Subject Matter

8. **Claims 1-24 and 35** are allowed.
9. **Claims 31-33** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cunha et al. (US 2004/0008159, herein after "Cunha") teaches a display system including an optical transmitter configured to optically transmit digital image information associated with an image to be displayed.

Koll (US 2004/0085271) teaches a display system including a projector which is adapted to wirelessly transmit image information and a receiver which is configured to wirelessly receive a portion of the image information.

Tuli (US 5,612,798) teaches a display mechanism incorporating a scanning laser which is used to address a two dimensional photocell matrix array.

Sandback (GB 2,118,803) teaches a display device replacing a cathode ray tube having a scanned light source such as a laser projecting an image onto an image intensifying screen.

Johnson et al. (US 6,707,516) teaches a single-panel field sequential full color display system comprising a projector and a screen, wherein the lights emitted from the projector is encoded on the screen.

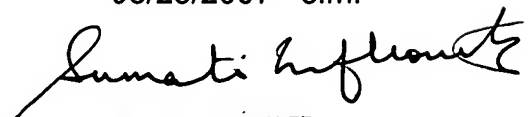
Stephenson, III (US 2005/0104806) teaches a display writer for writing on a light writable display.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (572) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

03/28/2007 - s.m. -


SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER